



DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
WITH PACKET SWITCHING NETWORK

John K. Walton et al.
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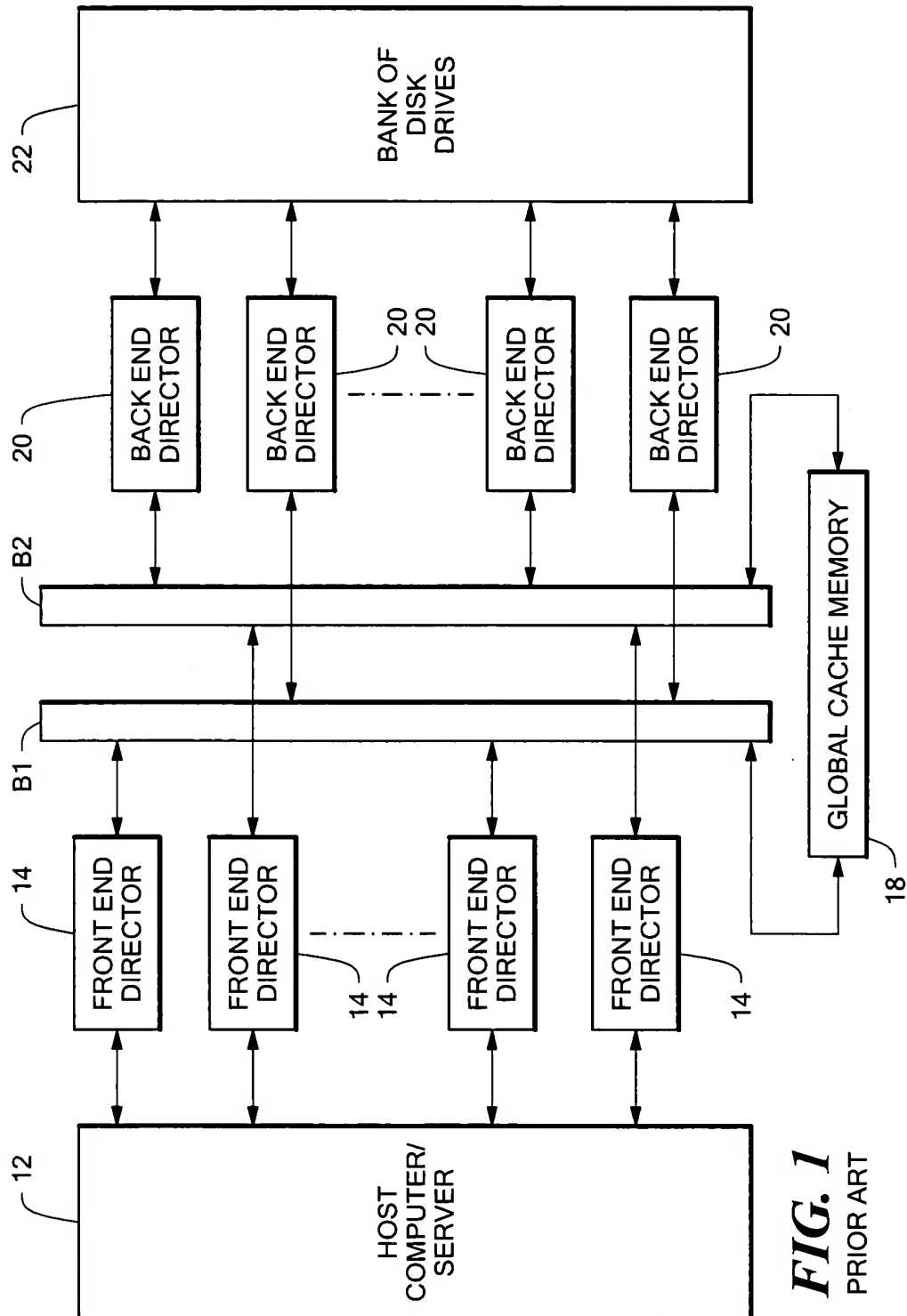


FIG. 1
PRIOR ART

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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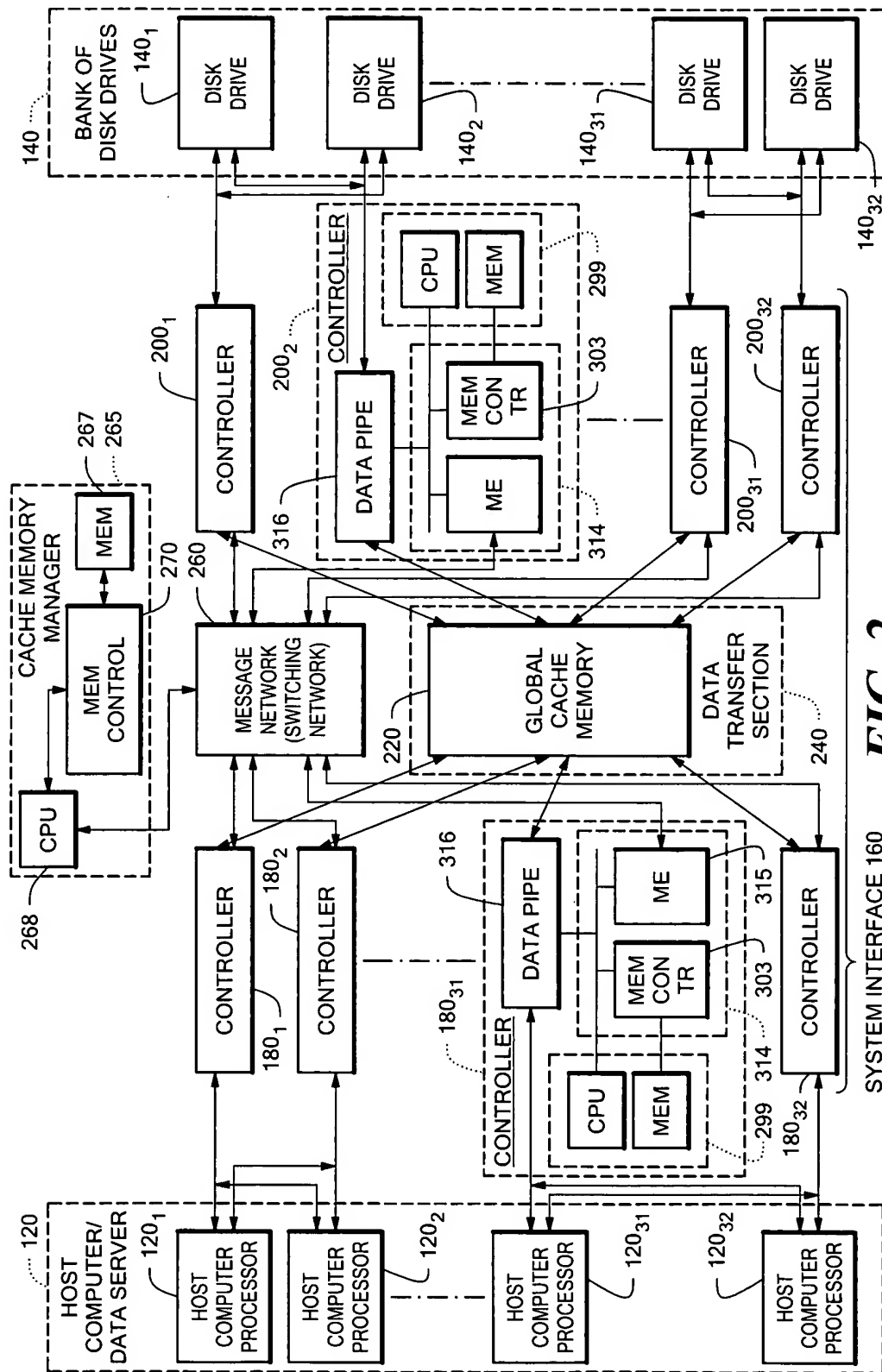


FIG. 2

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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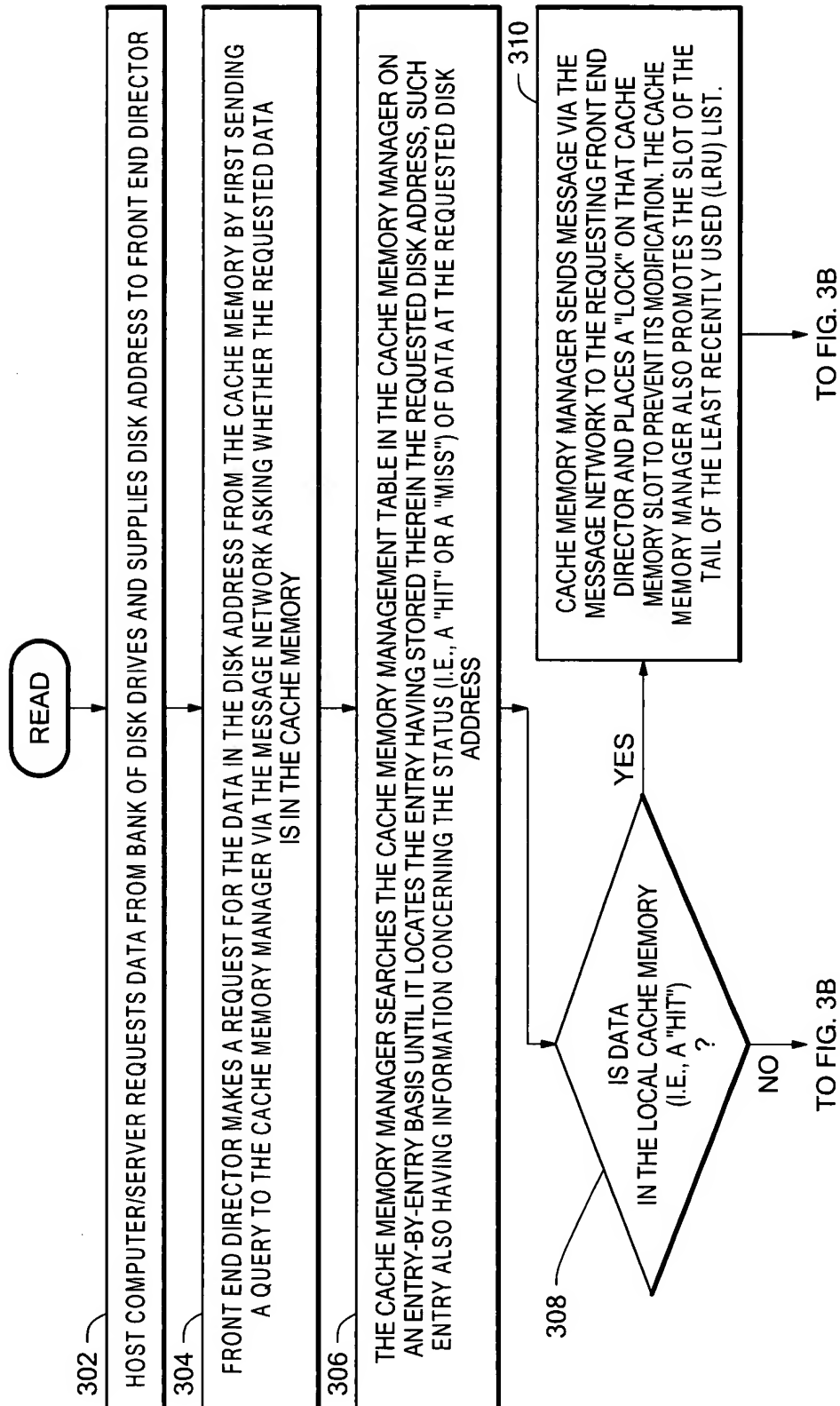
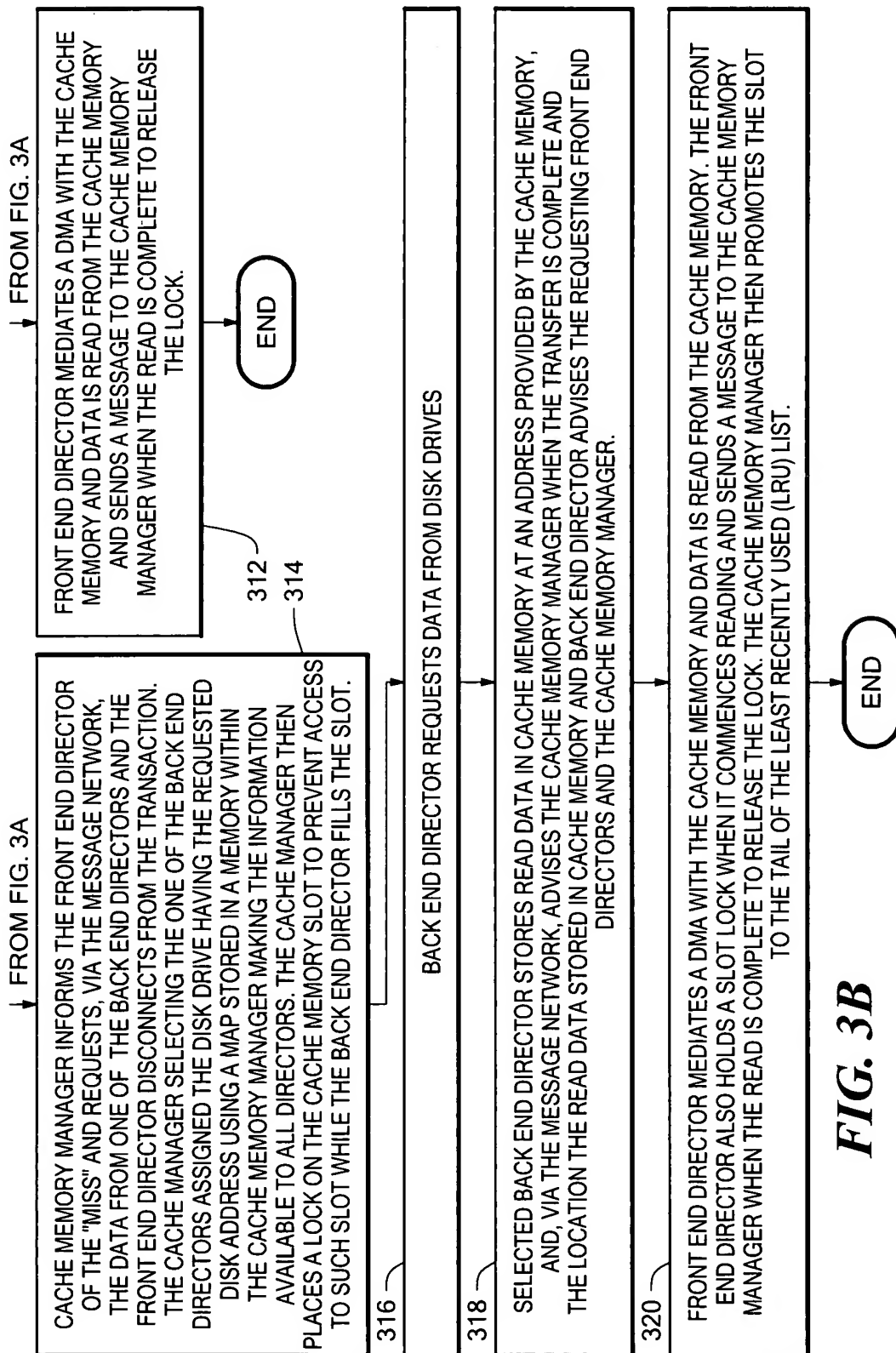


FIG. 3A

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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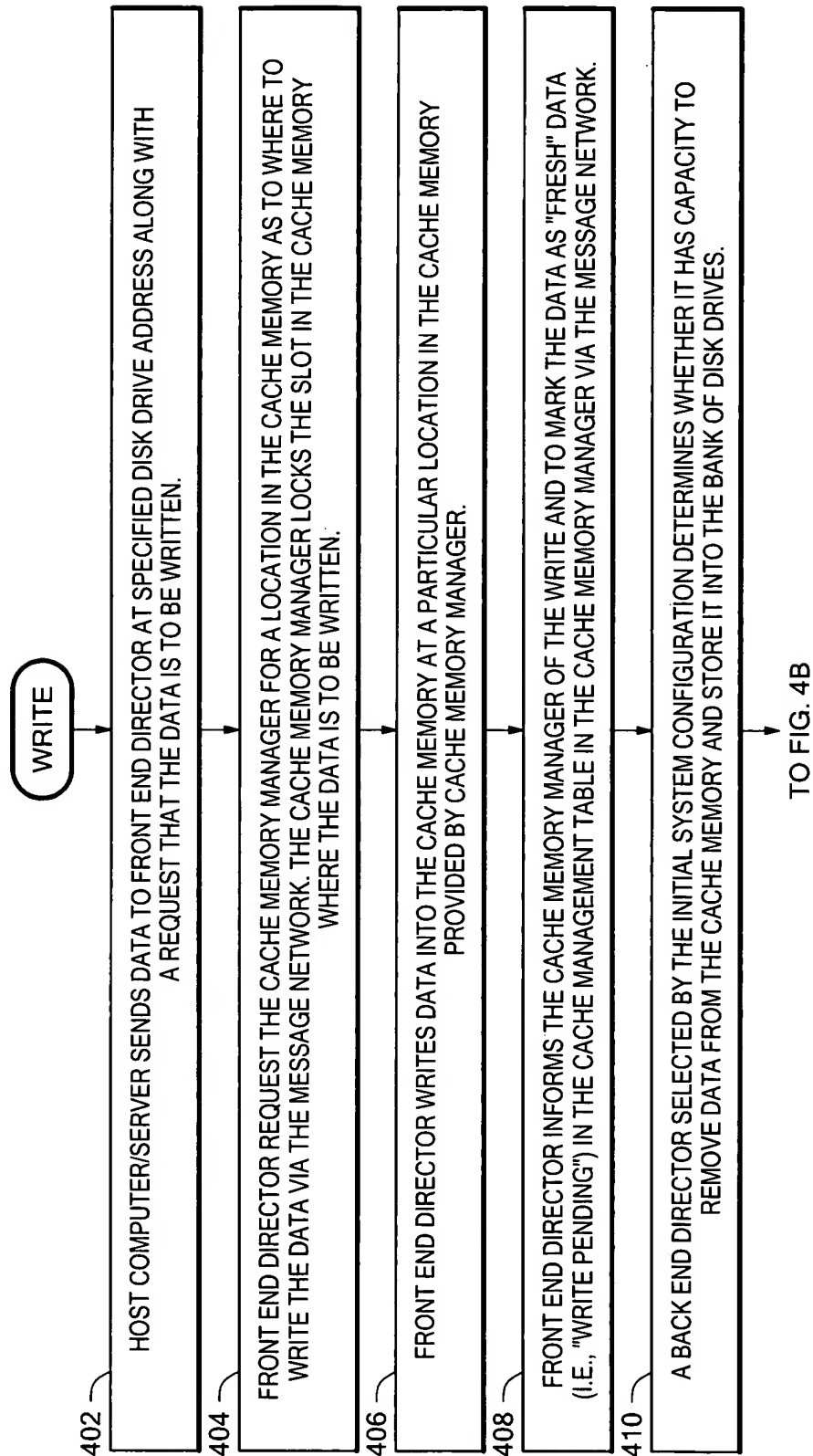


FIG. 4A

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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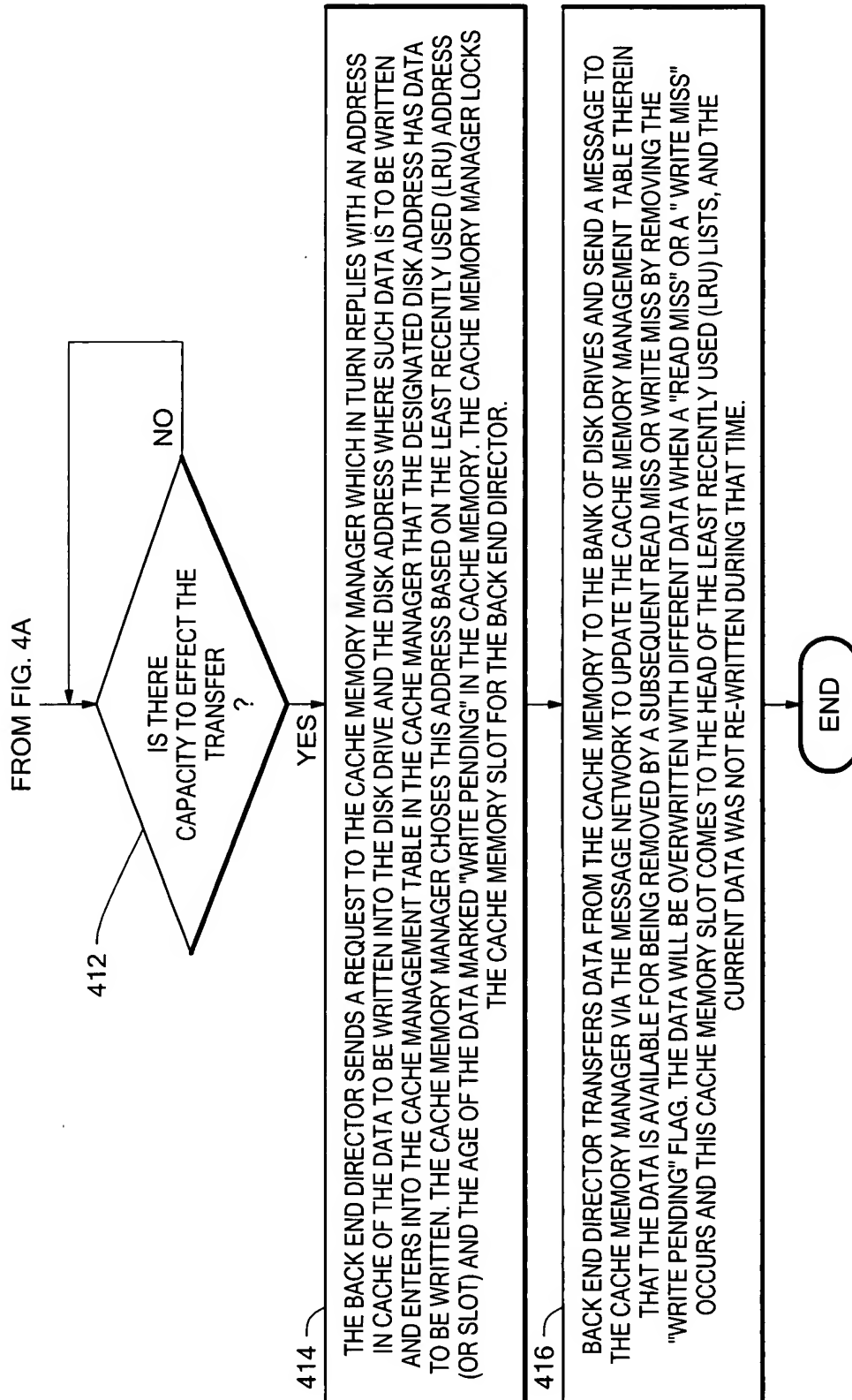


FIG. 4B

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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| ADDRESS TO MAP | INFORMATION STORED IN MAP AT THE MAP ADDRESS | | |
|---------------------|--|---|---------------|
| | DISK ADDRESS/HIT or 'MISS' | | MISC. CONTROL |
| CACHE MEMORY SLOT | | | TIME WRITTEN |
| Cache Memory Slot 1 | IN DISK DRIVE AT ADDRESS D (A 'MISS') | | |
| Cache Memory Slot 2 | IN CACHE (A 'HIT') | | |
| Cache Memory Slot 3 | IN DISK DRIVE AT ADDRESS D (A 'MISS') | | |
| ! | ! | ! | ! |
| Cache Memory Slot n | IN DISK DRIVE AT ADDRESS D (A 'MISS') | | |

FIG. 5

| HASHED ADDRESS TO MAP | INFORMATION STORED IN MAP AT THE MAP ADDRESS | HASHED ADDRESS TO MAP | INFORMATION STORED IN MAP AT THE MAP ADDRESS | HASHED ADDRESS TO MAP | INFORMATION STORED IN MAP AT THE MAP ADDRESS |
|----------------------------------|--|----------------------------------|--|----------------------------------|--|
| CACHE MEMORY SLOT | CACHE MEMORY SLOT | CACHE MEMORY SLOT | CACHE MEMORY SLOT | CACHE MEMORY SLOT | CACHE MEMORY SLOT |
| Cache Memory Slot 1 | Cache Memory Slot 1 | Cache Memory Slot 1 | Cache Memory Slot 1 | Cache Memory Slot 1 | Cache Memory Slot 1 |
| Cache Memory Slot 2 | Cache Memory Slot 2 | Cache Memory Slot 2 | Cache Memory Slot 2 | Cache Memory Slot 2 | Cache Memory Slot 2 |
| Cache Memory Slot 3 | Cache Memory Slot 3 | Cache Memory Slot 3 | Cache Memory Slot 3 | Cache Memory Slot 3 | Cache Memory Slot 3 |
| ! | ! | ! | ! | ! | ! |
| Cache Memory Slot n ₁ | Cache Memory Slot n ₂ | Cache Memory Slot n ₂ | Cache Memory Slot n ₂ | Cache Memory Slot n ₃ | Cache Memory Slot n ₃ |

FIG. 5A

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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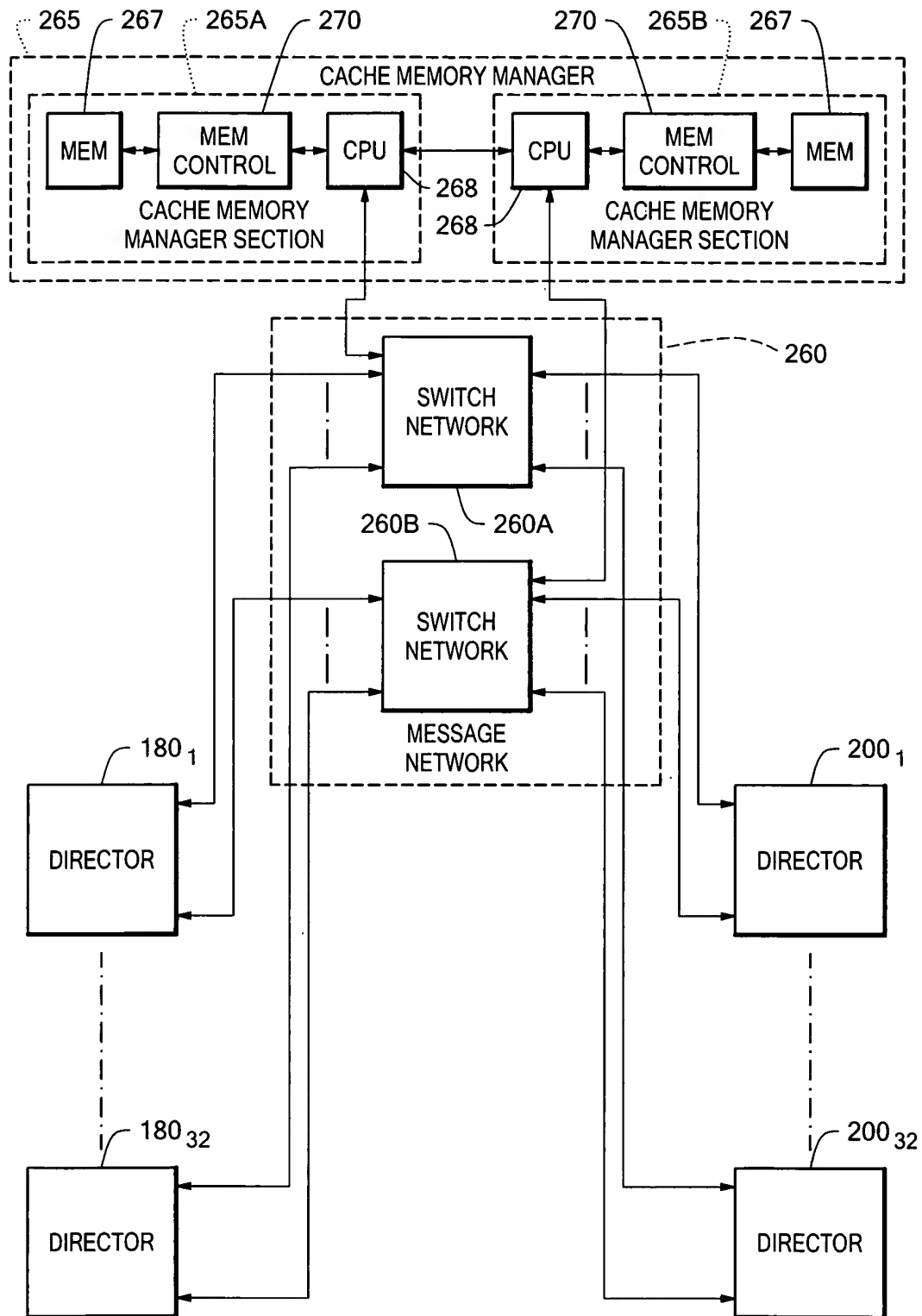


FIG. 6

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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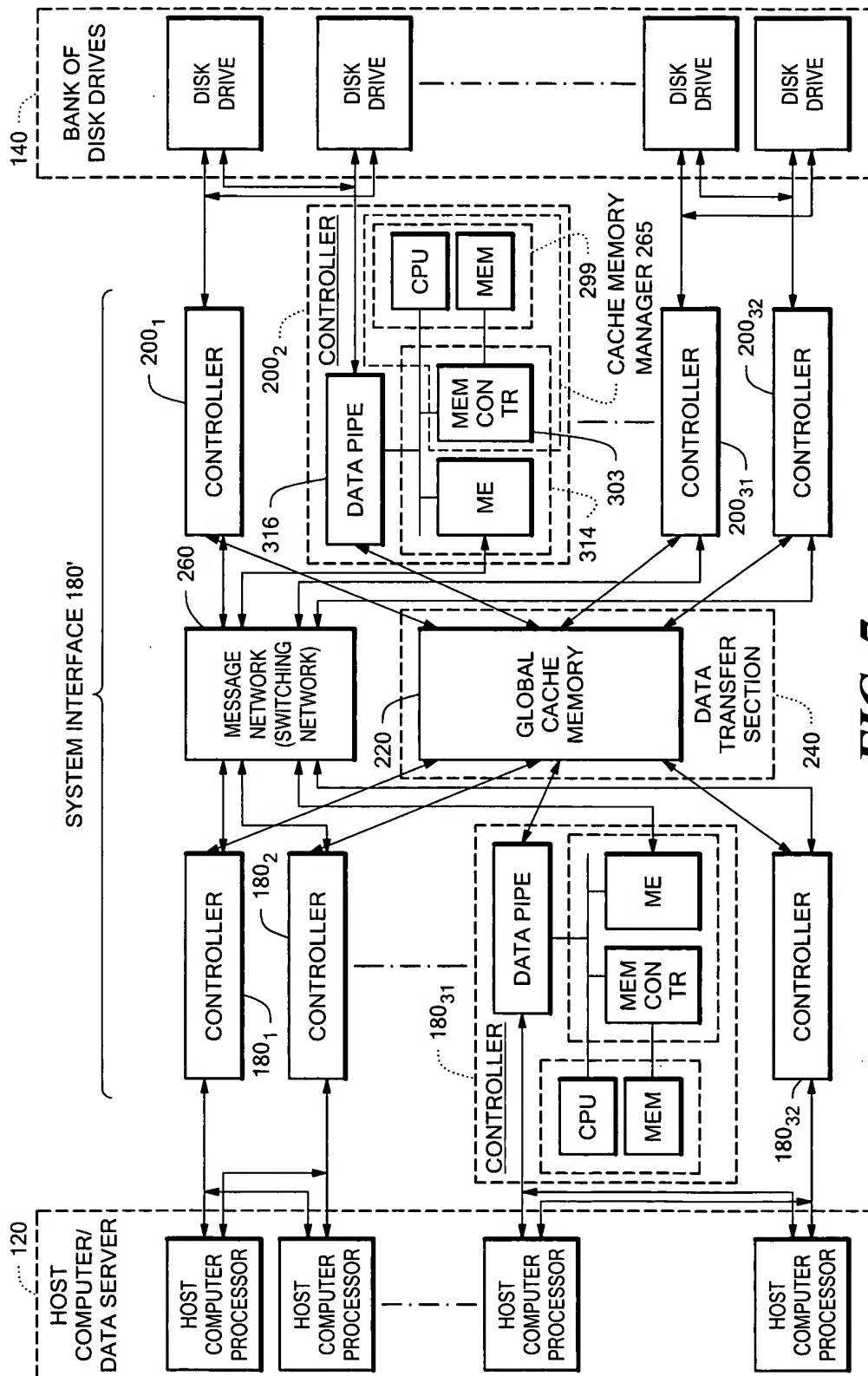


FIG. 7

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DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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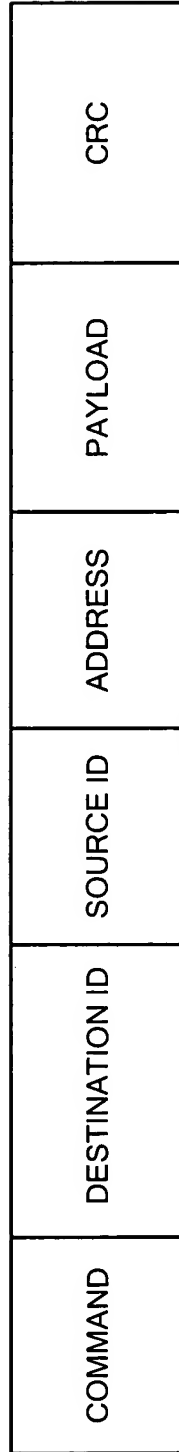


FIG. 8A

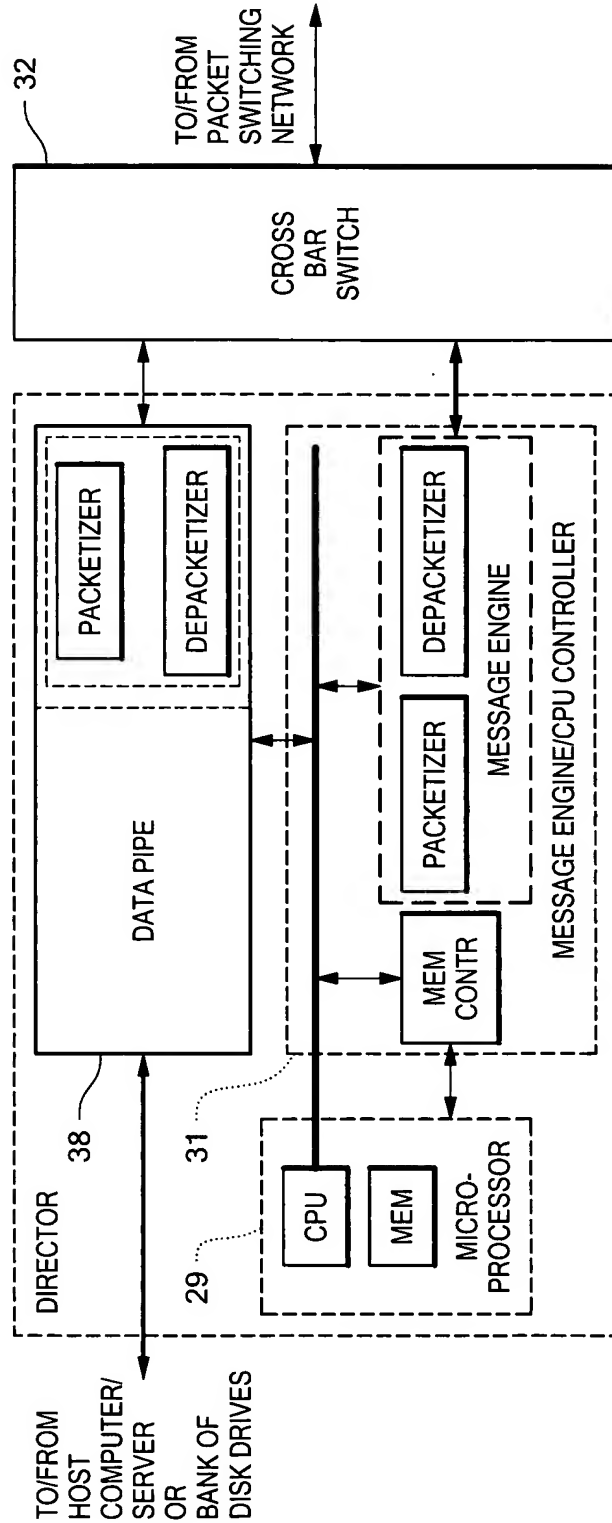


FIG. 9

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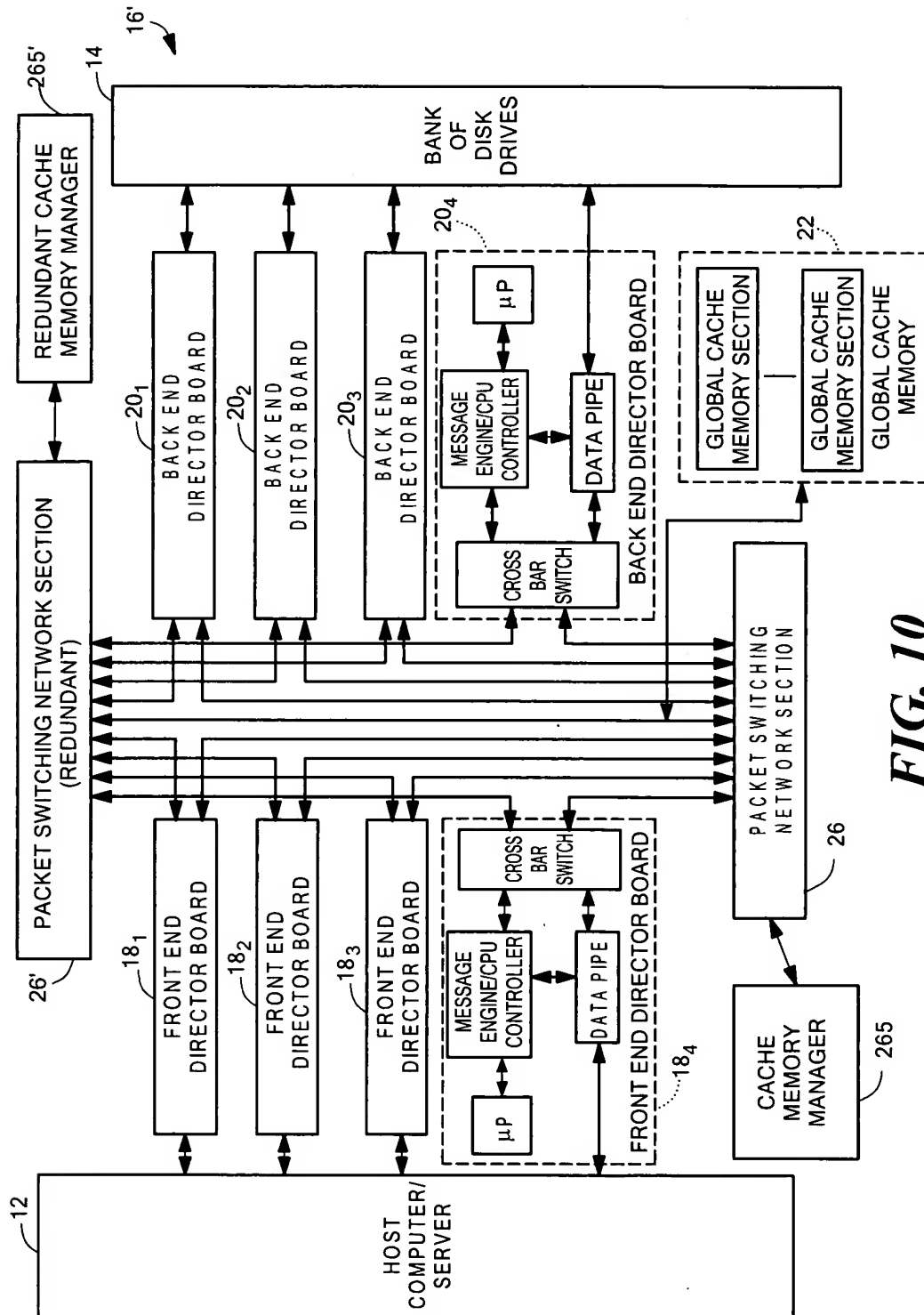


FIG. 10

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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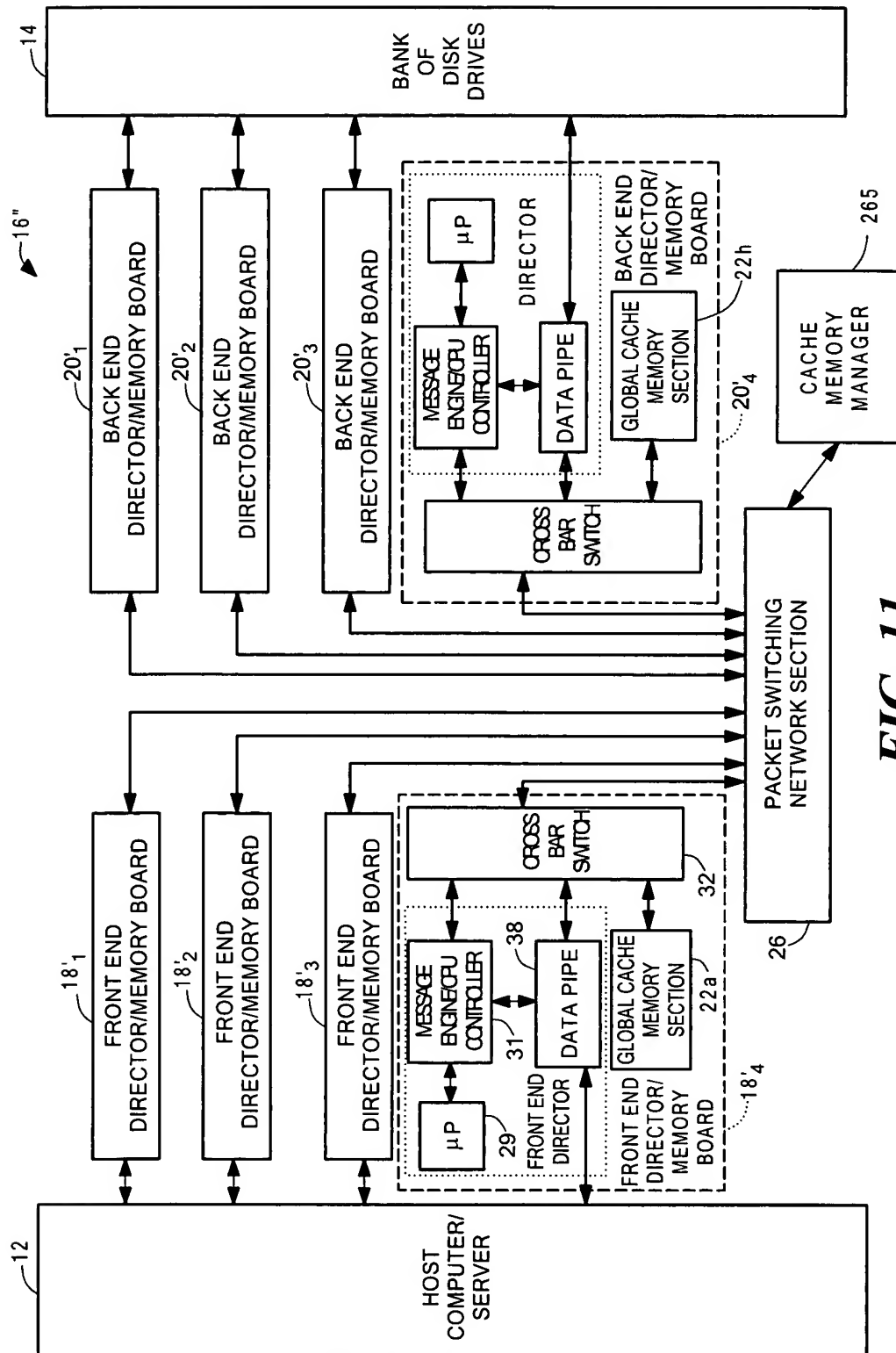


FIG. 11

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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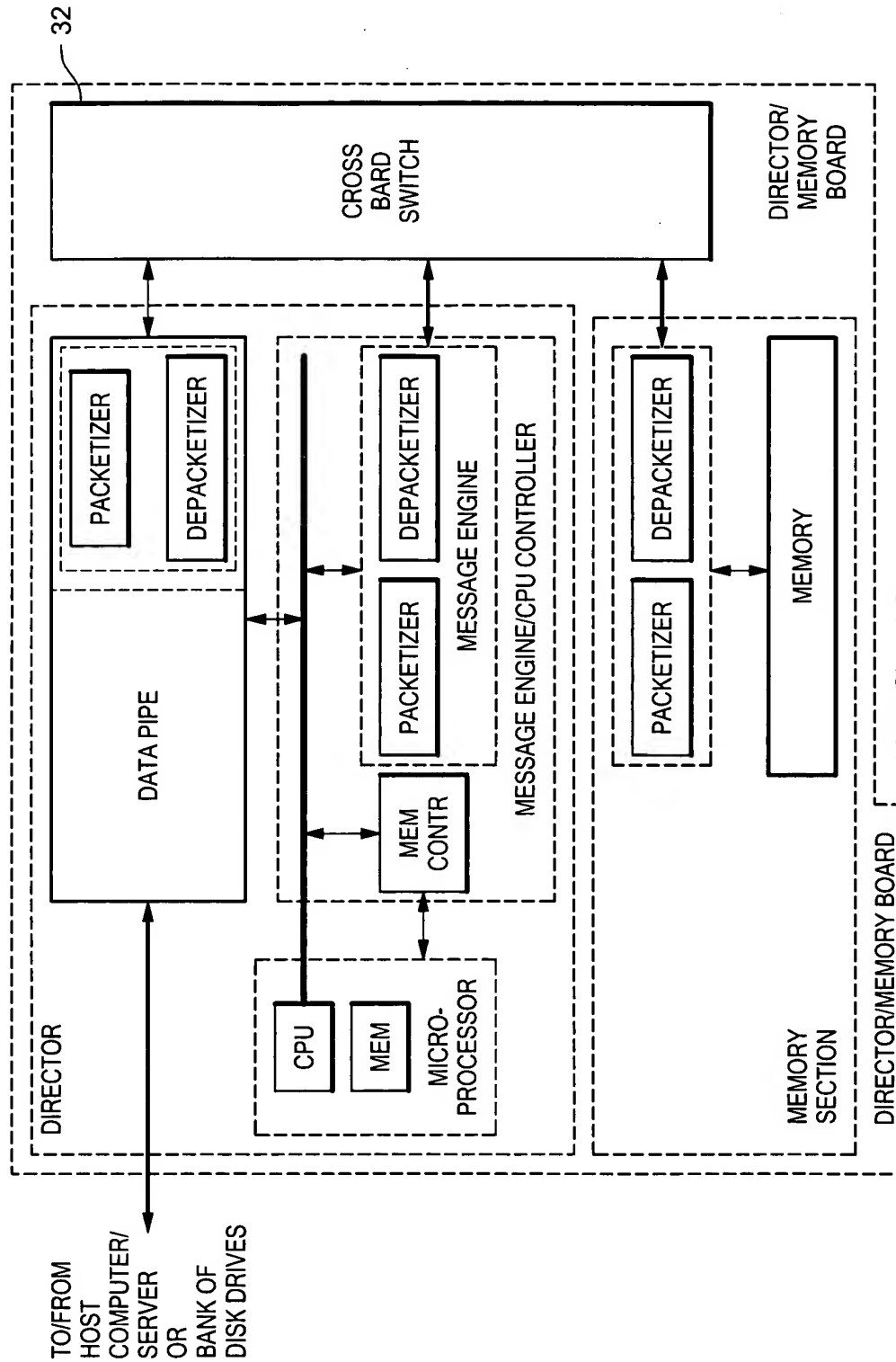


FIG. 12

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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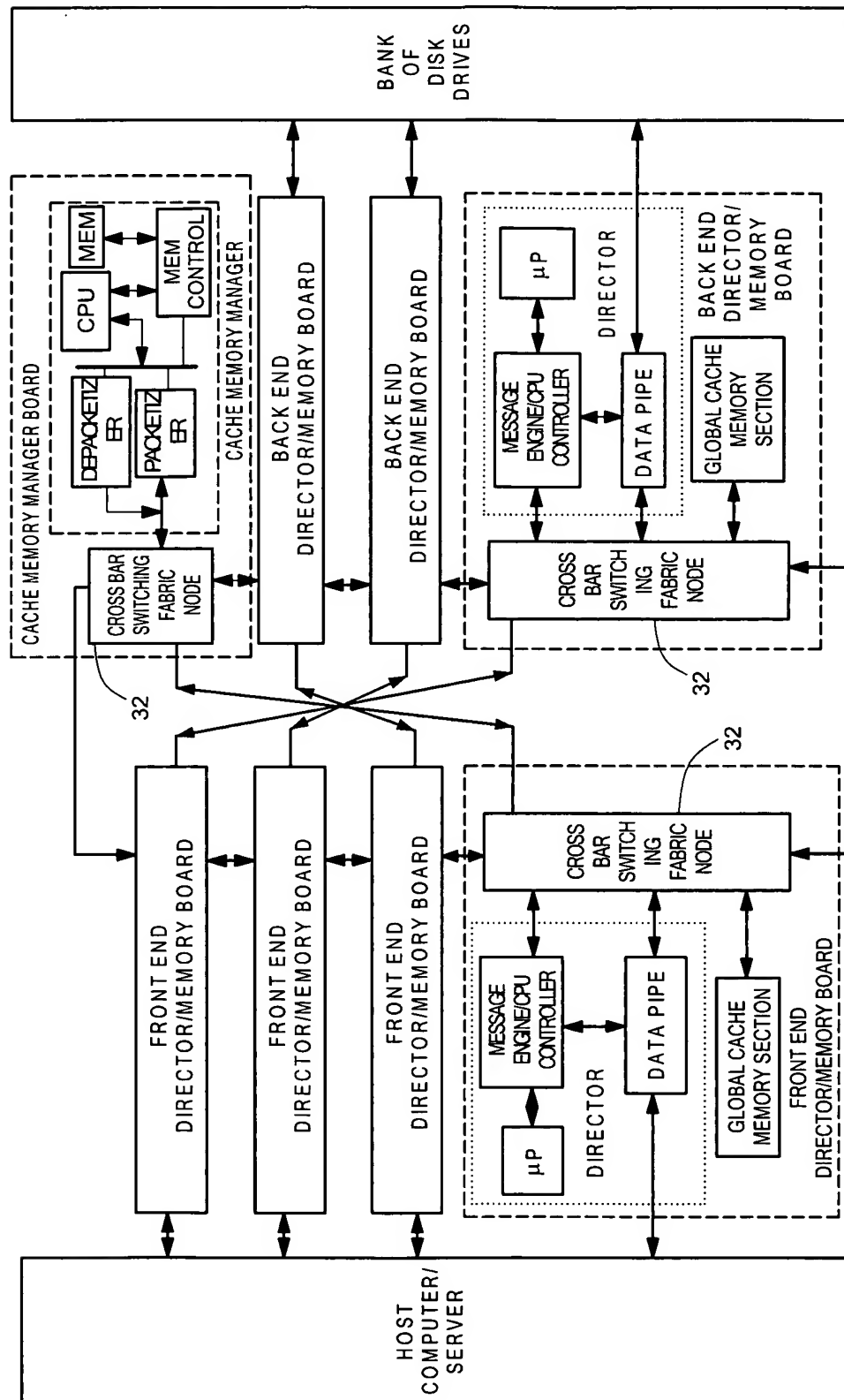


FIG. 13

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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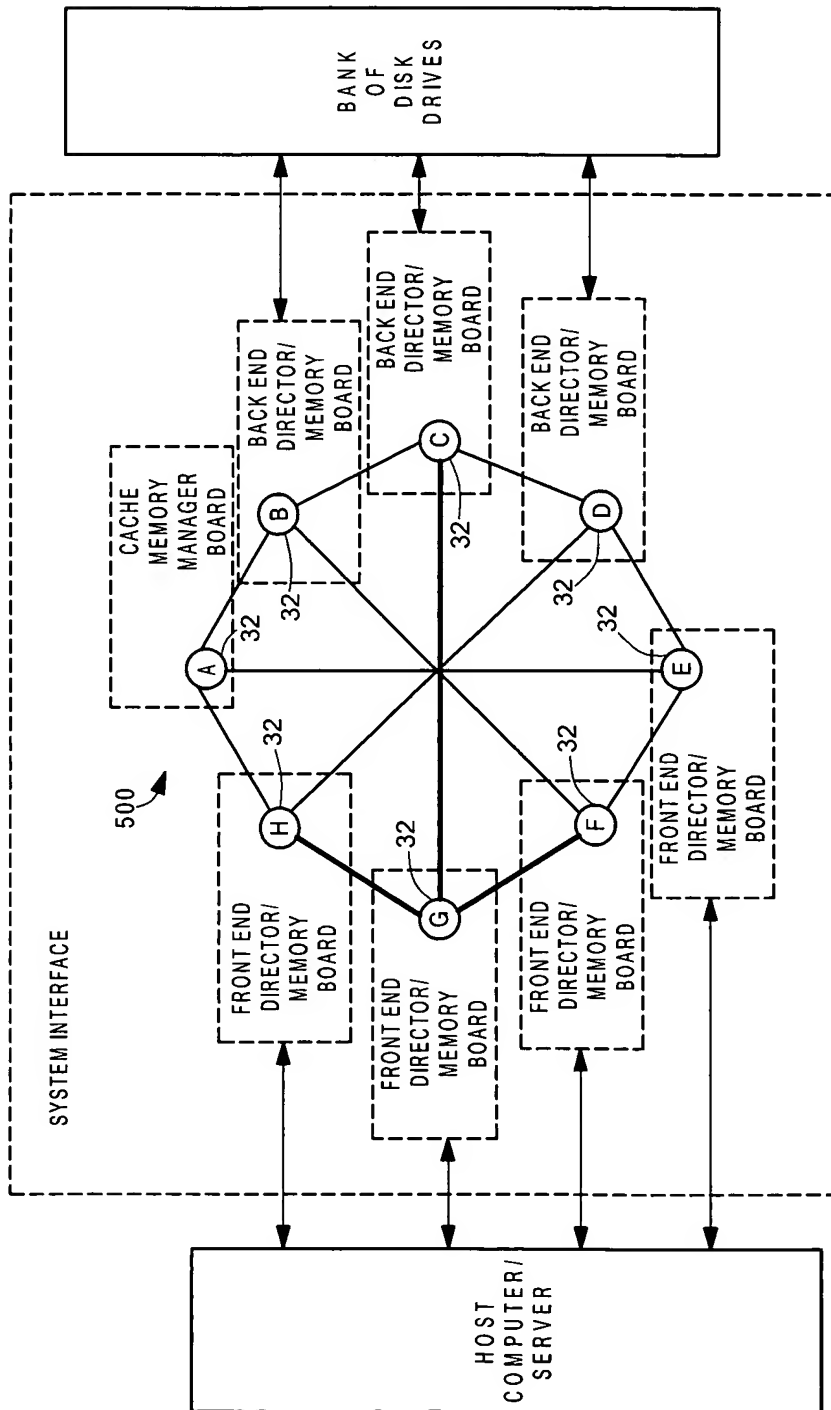


FIG. 14

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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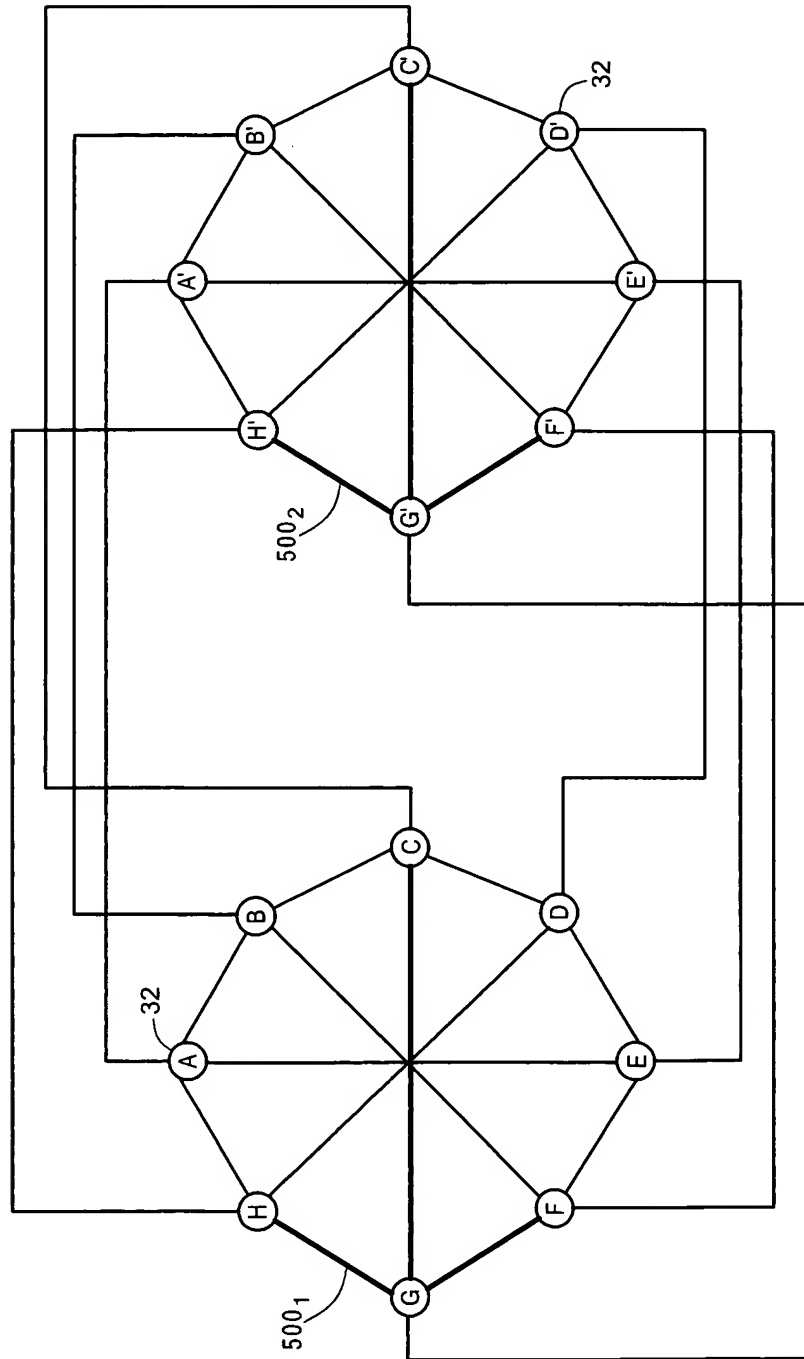


FIG. 15A

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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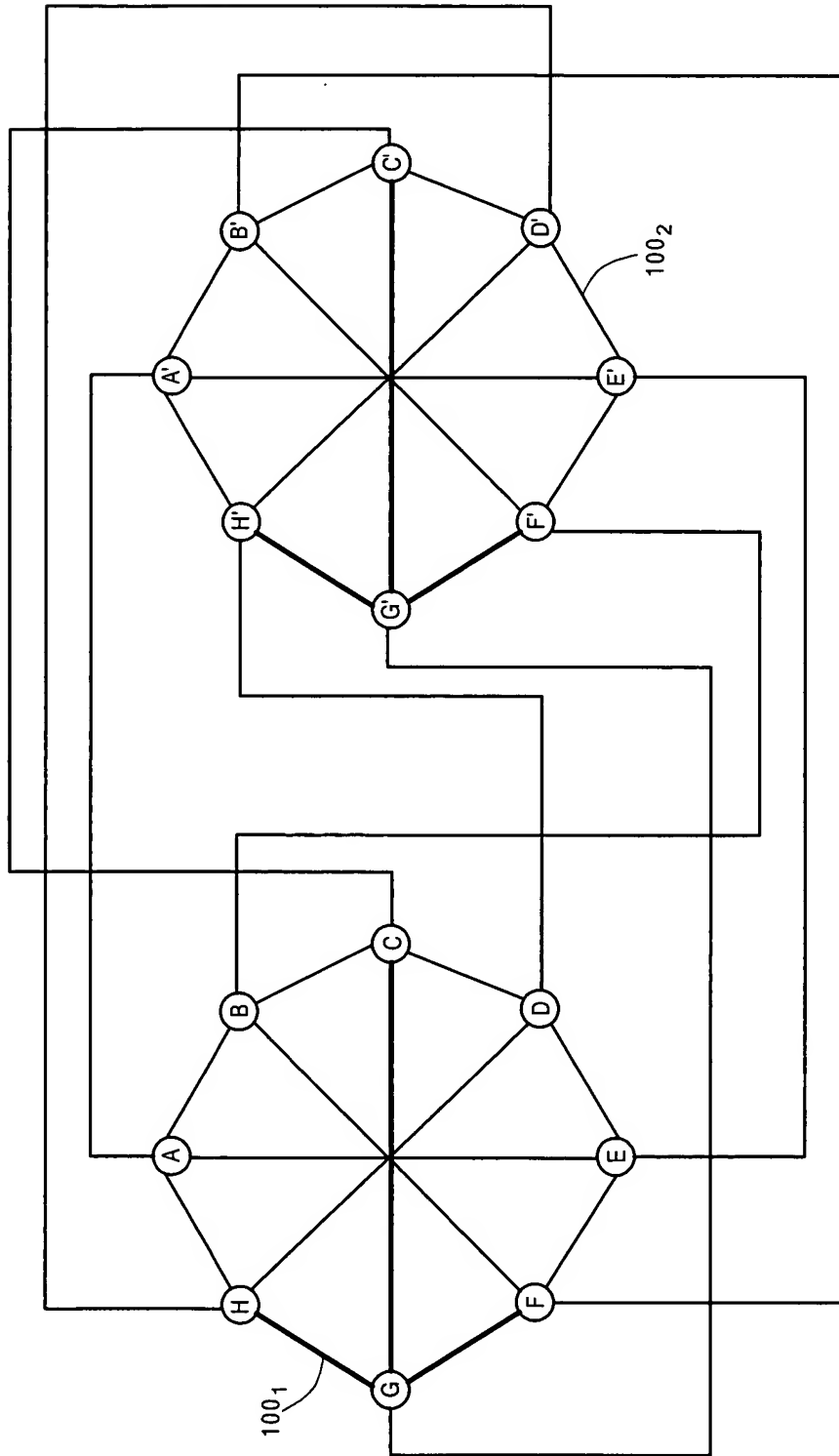


FIG. 15B

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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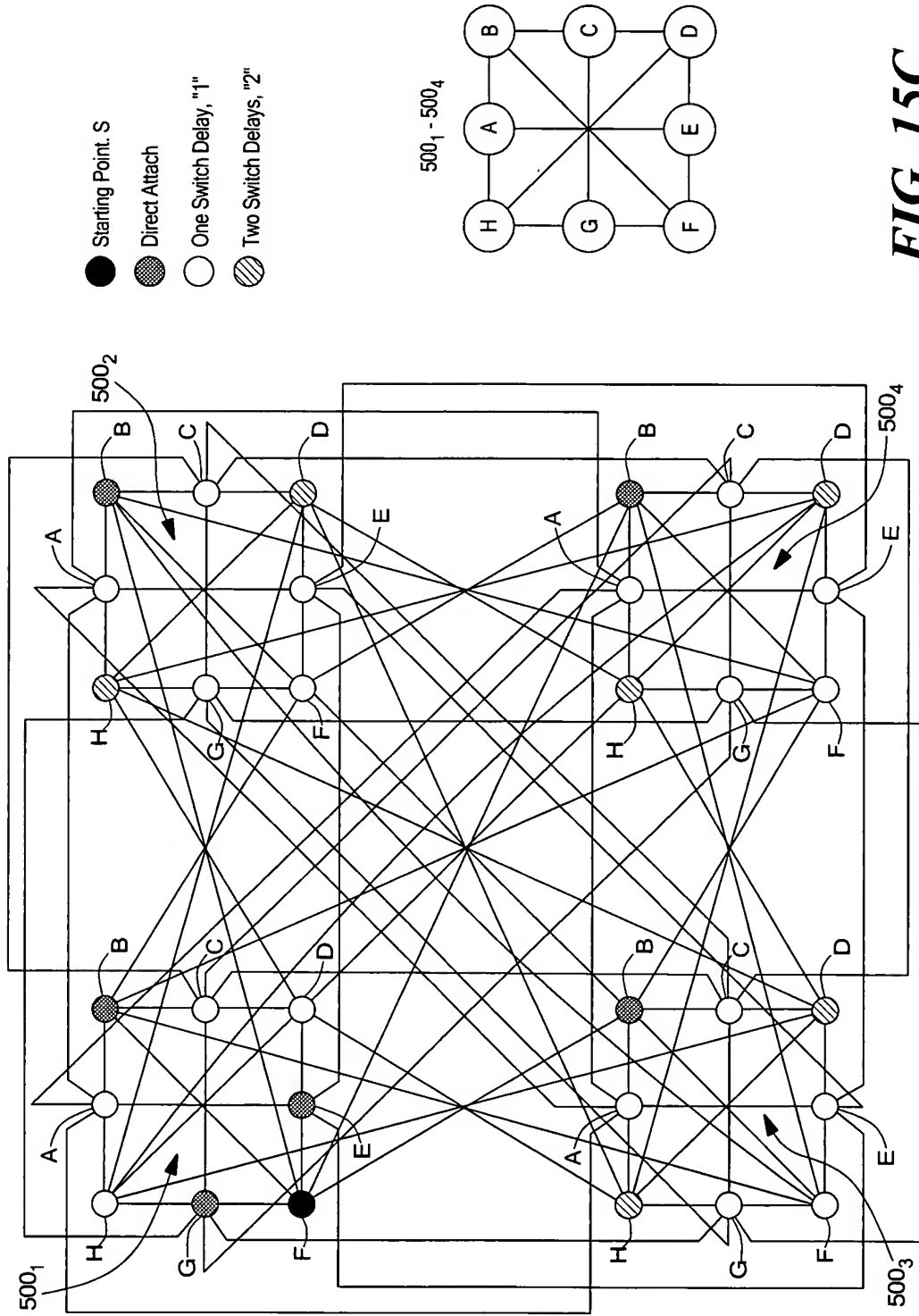


FIG. 15C

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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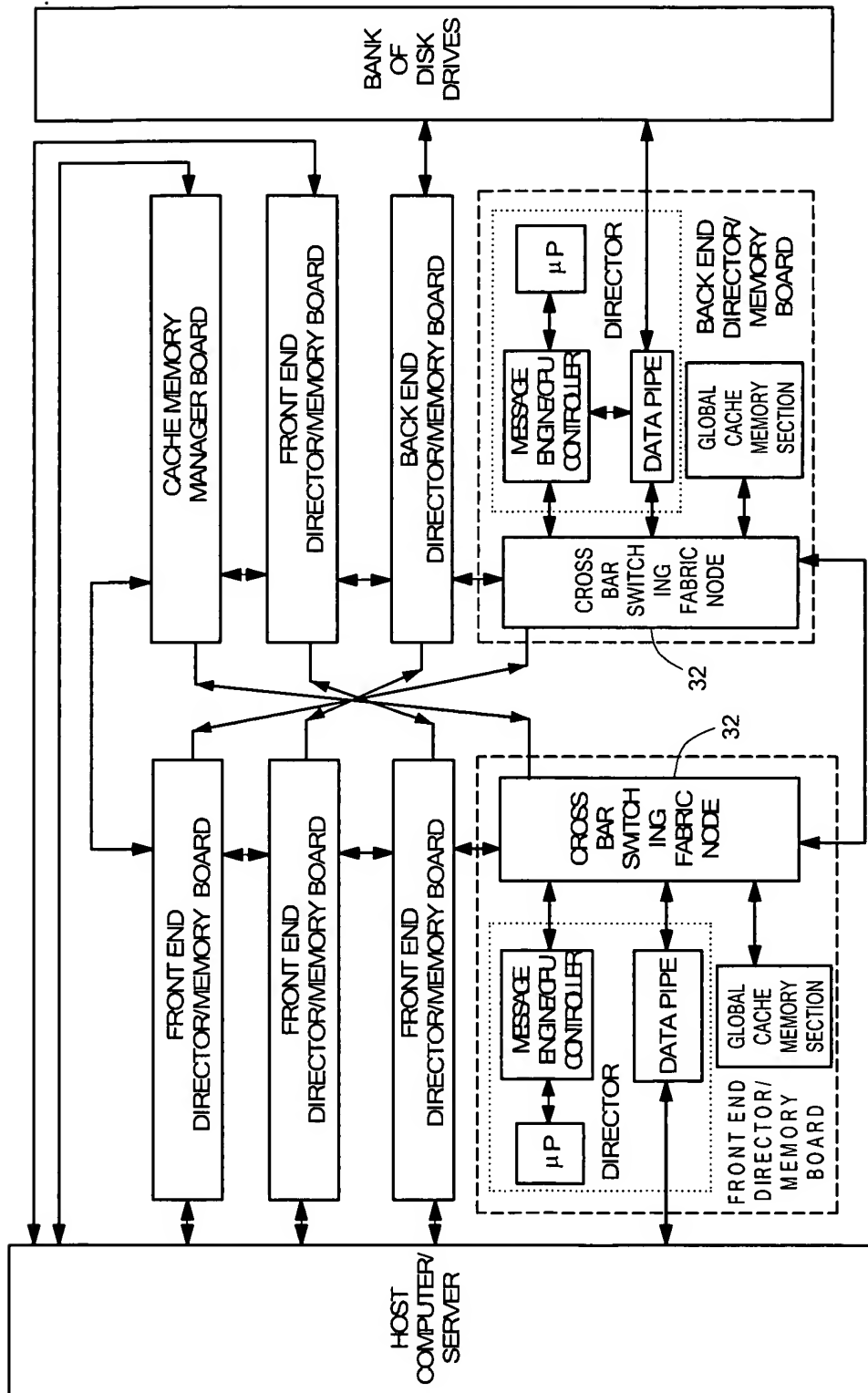


FIG. 16

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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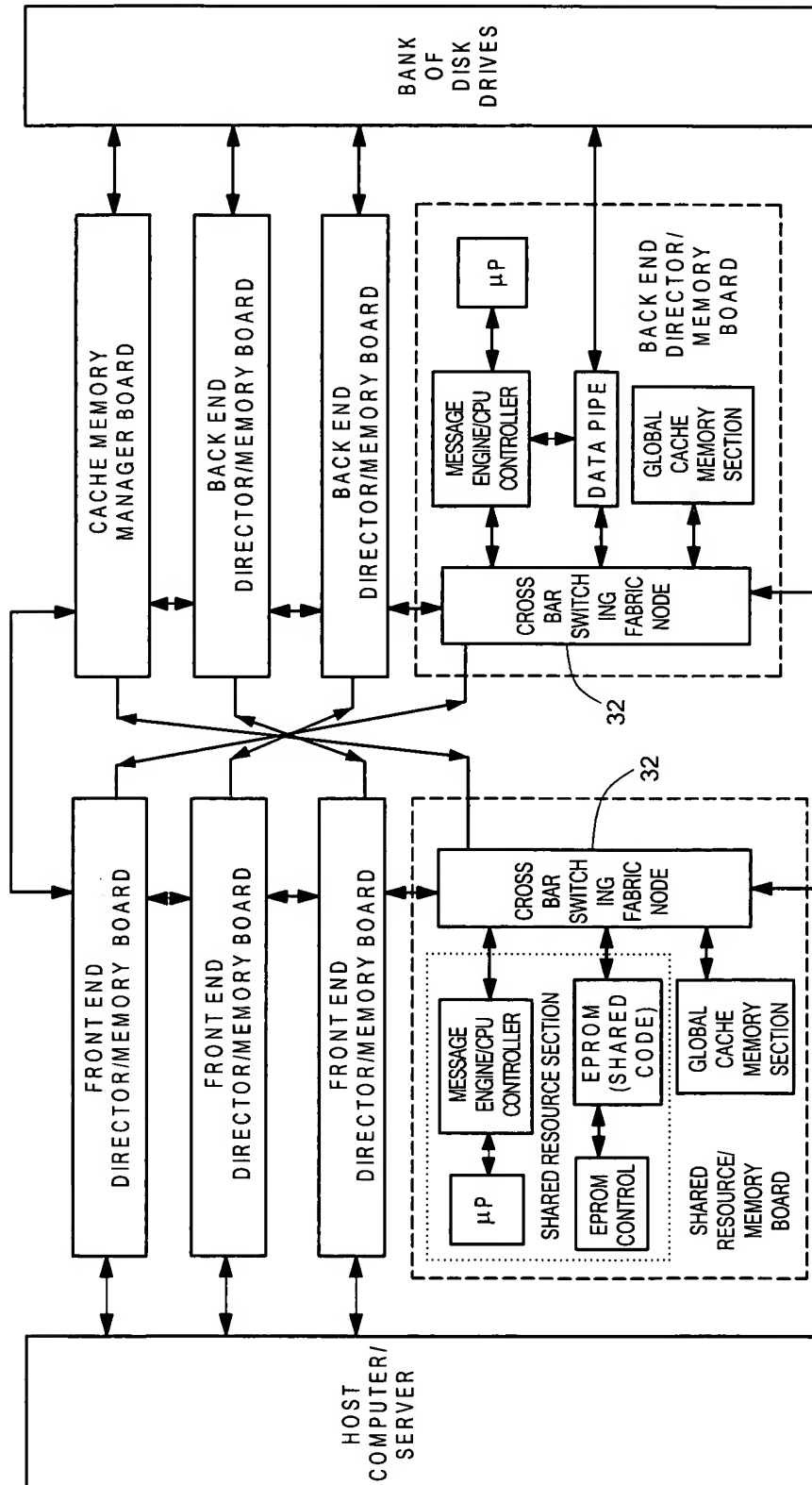


FIG. 17

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK

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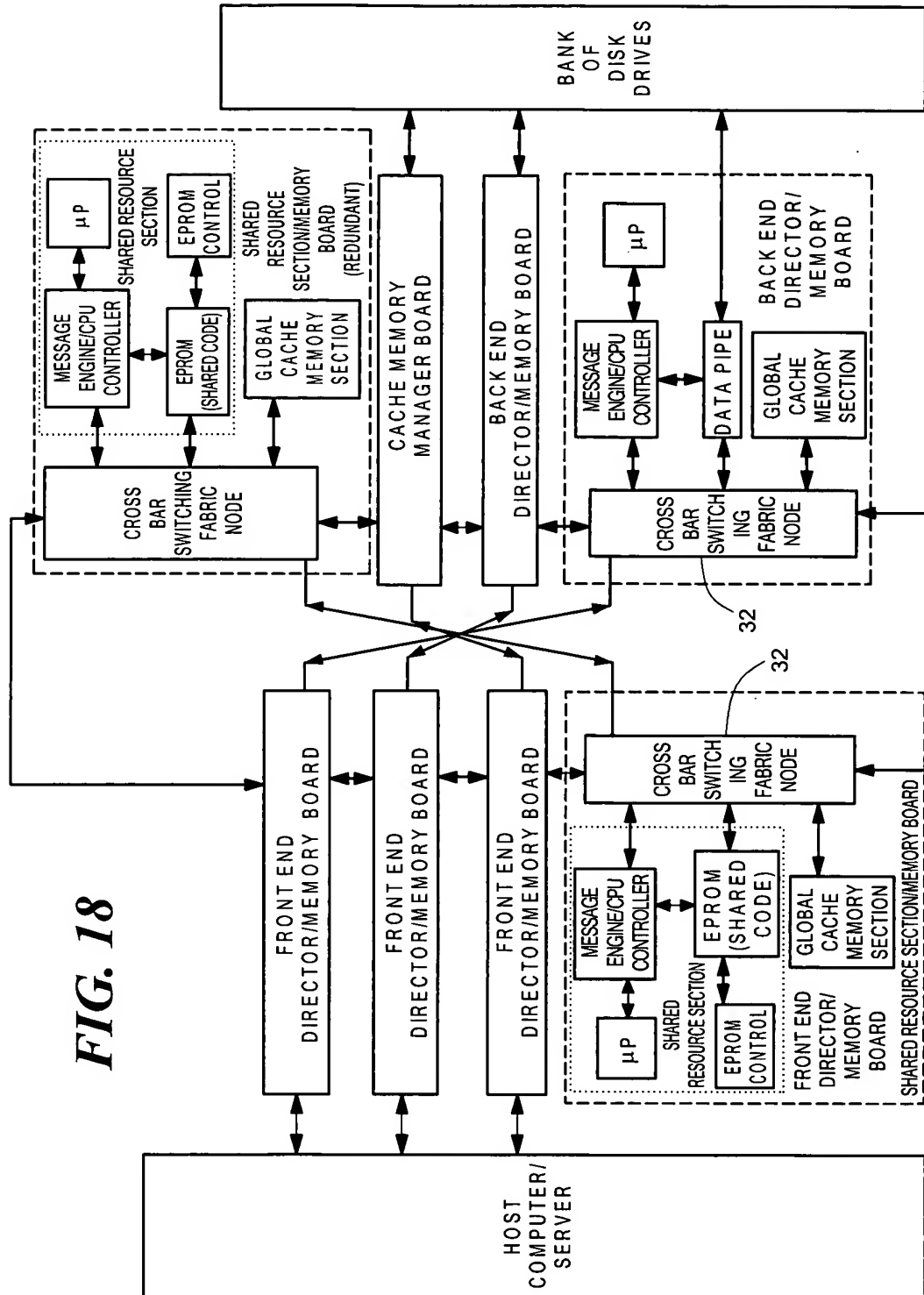


FIG. 18

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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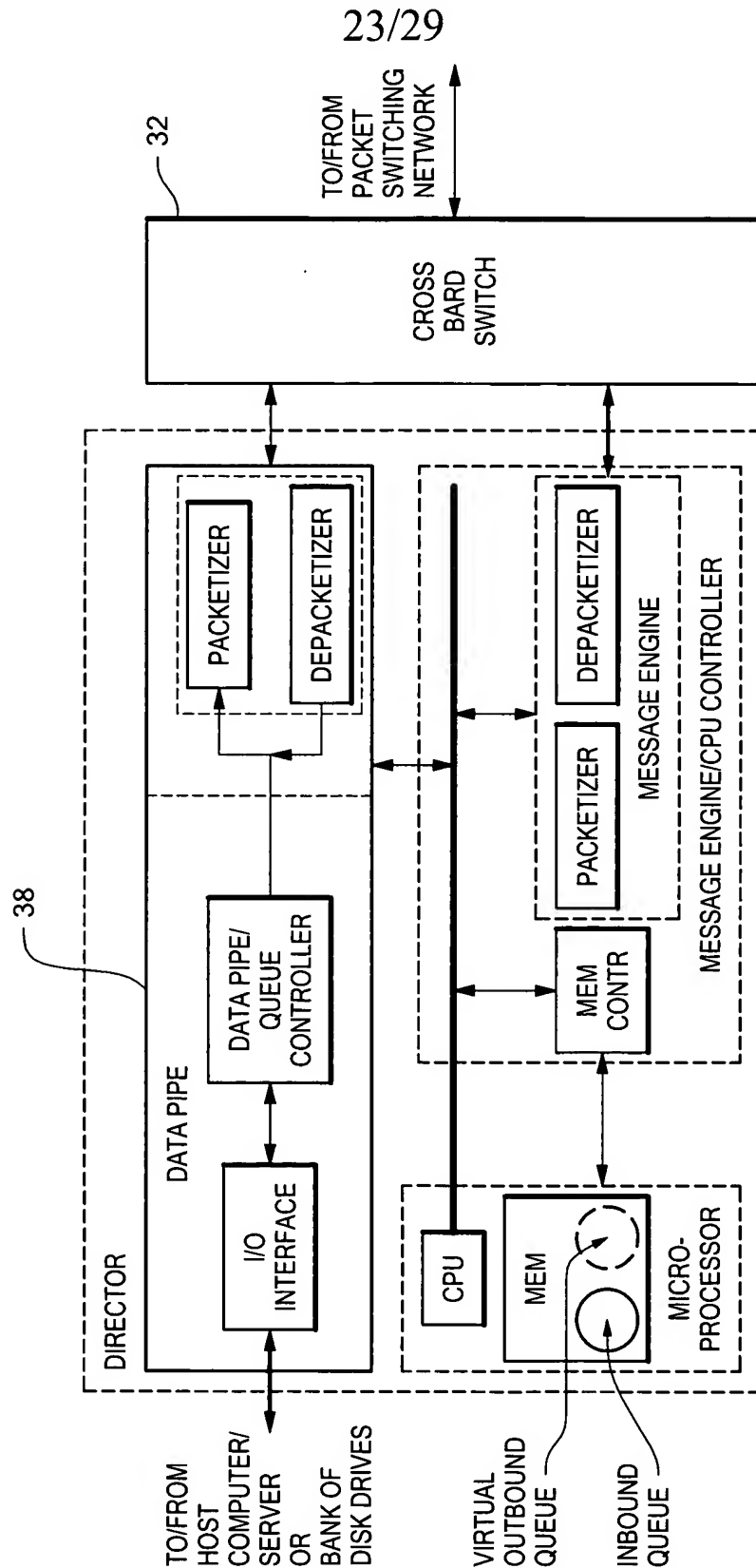


FIG. 19

DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER
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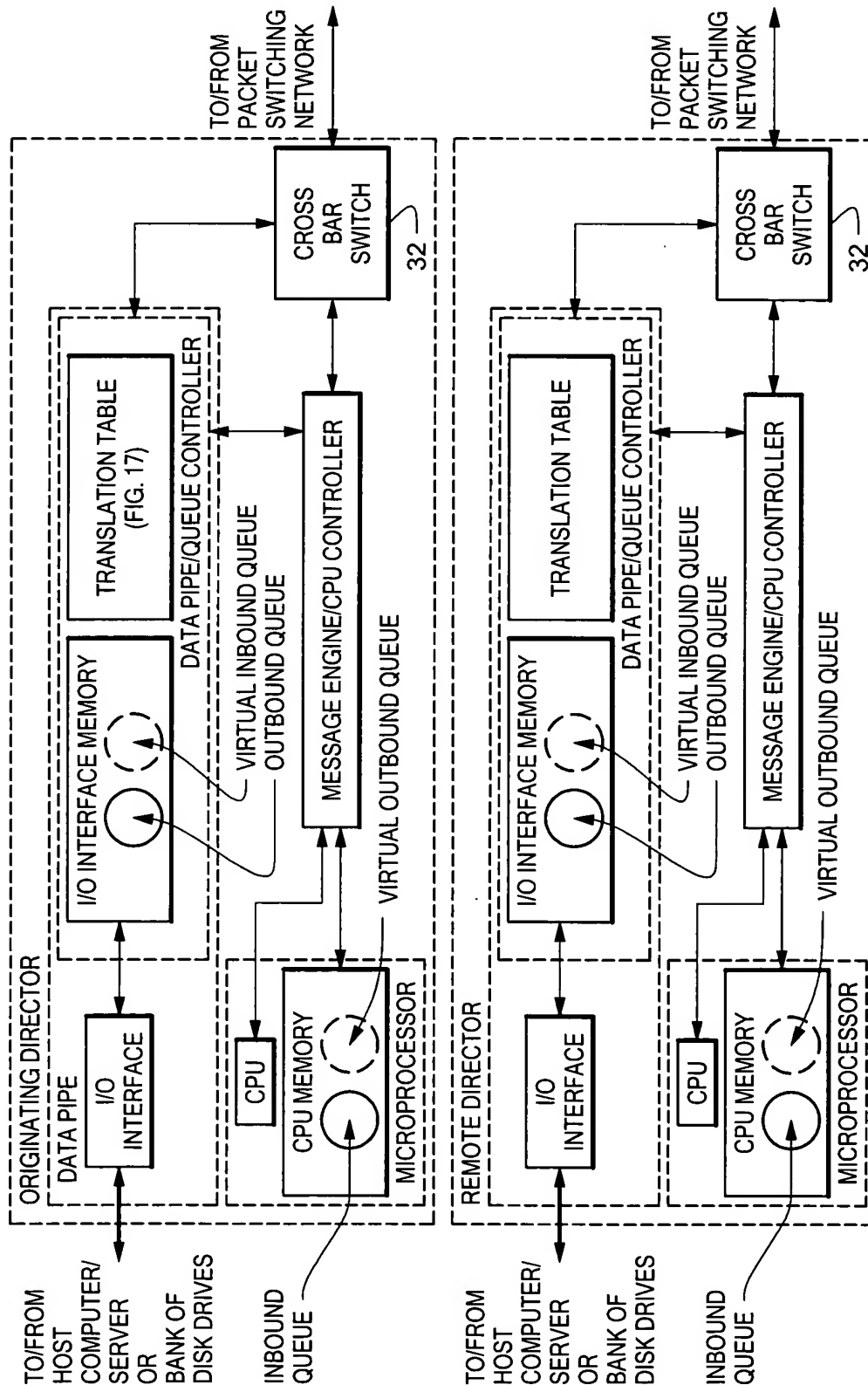


FIG. 20

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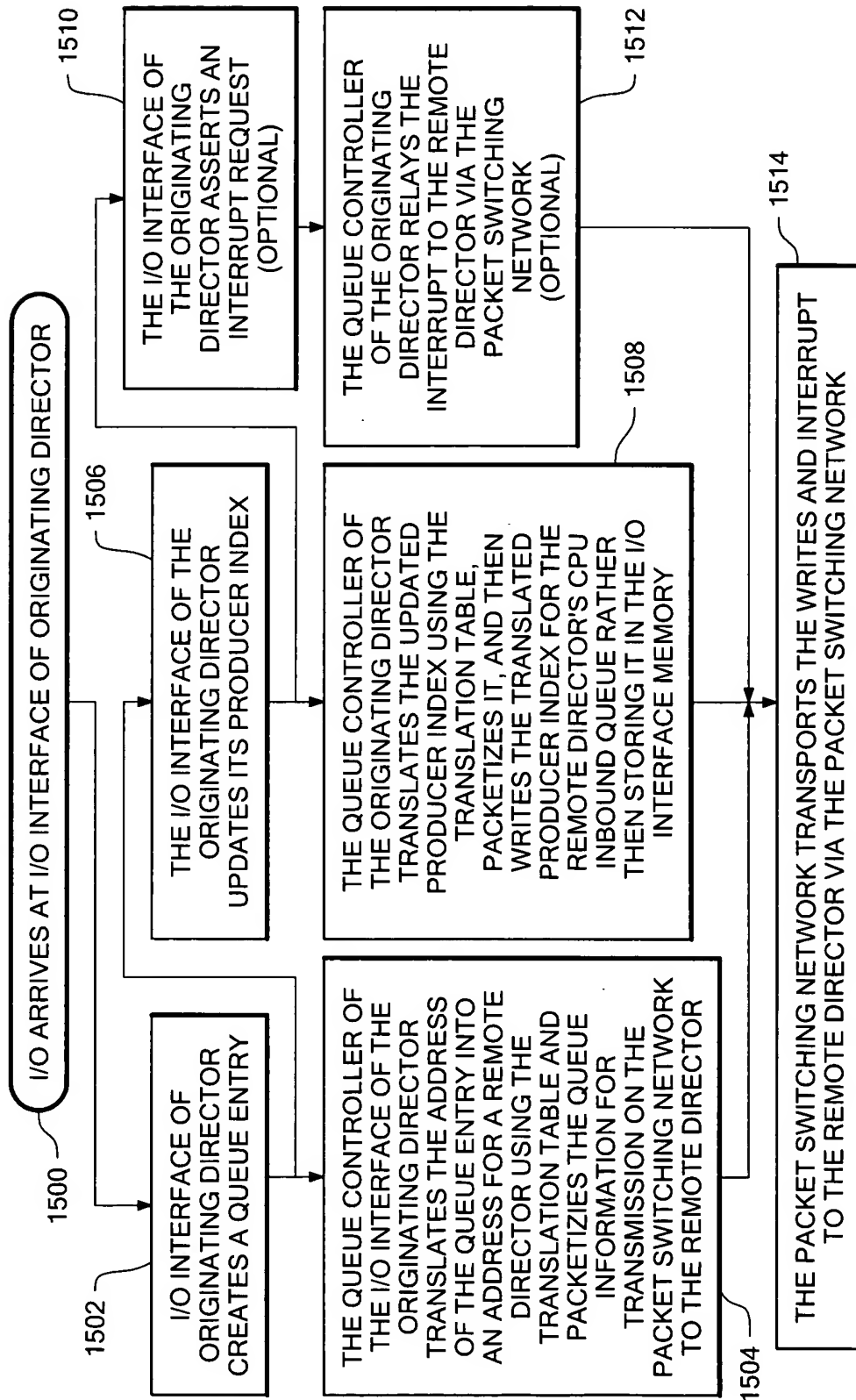


FIG. 21A

TO FIG. 21B

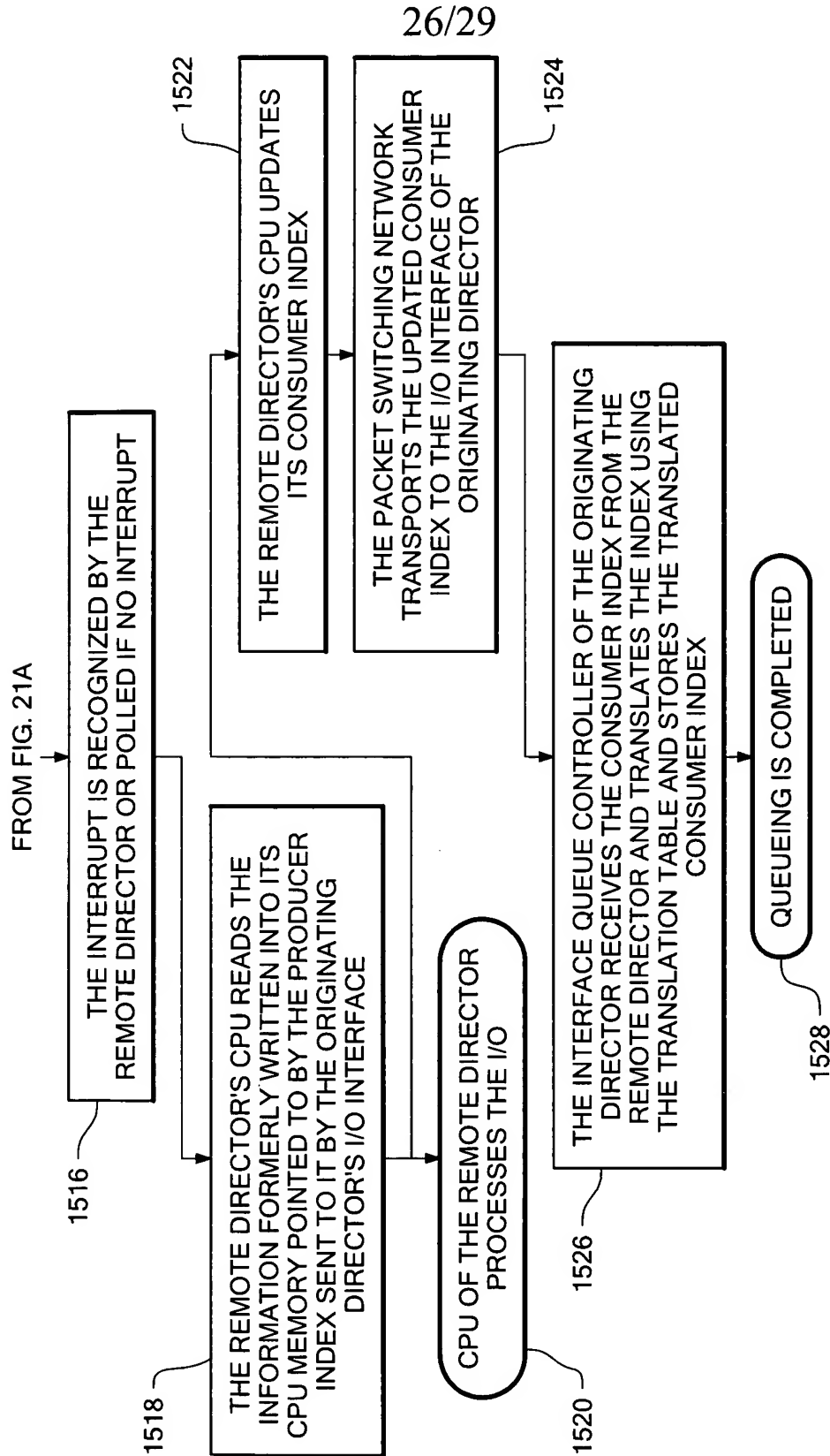


FIG. 21B

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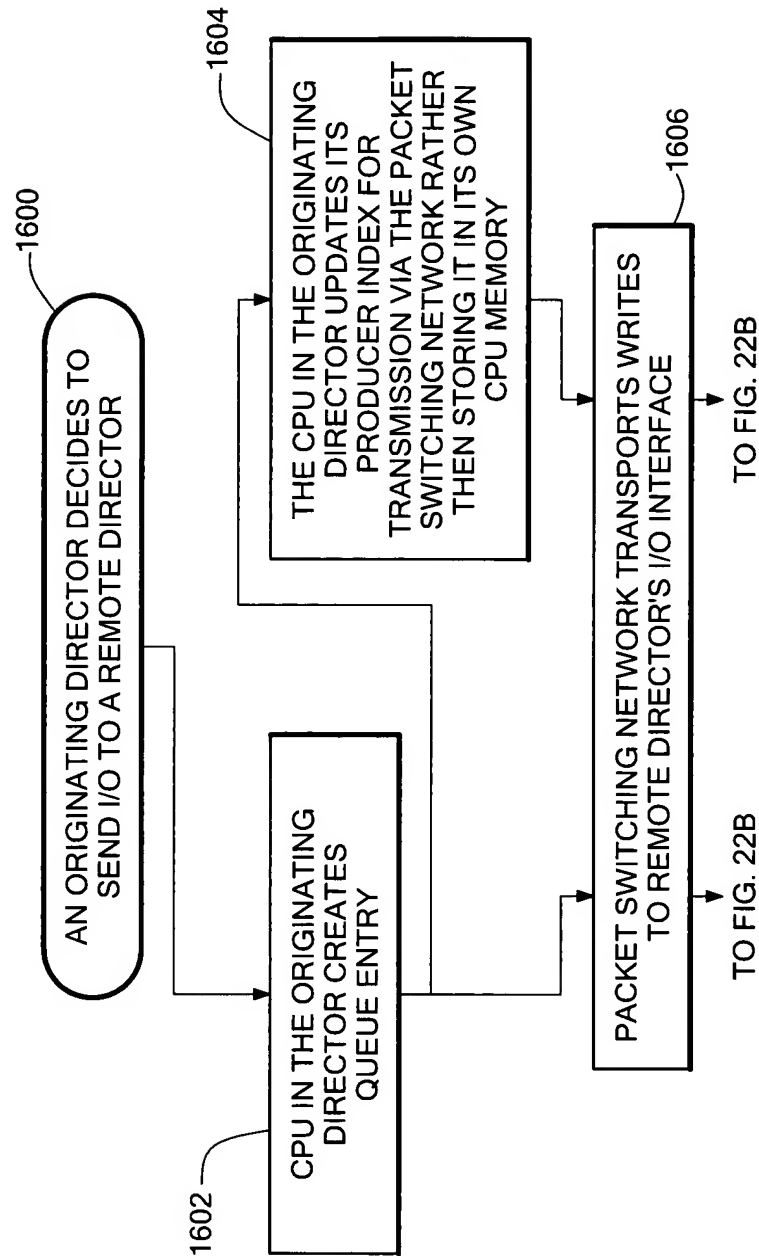


FIG. 22A

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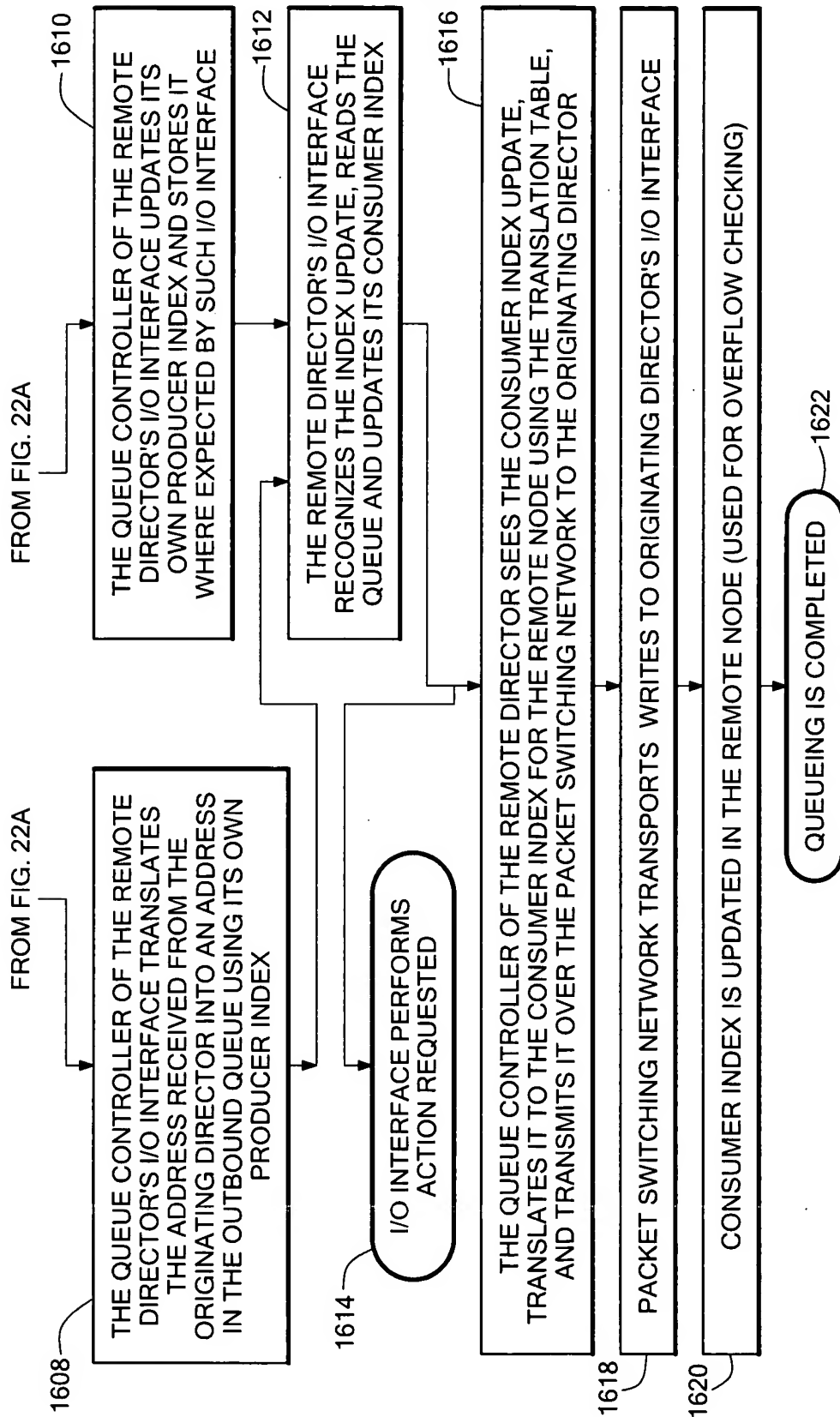


FIG. 22B

Translation Table Format

| Address | | Data | |
|---------|-------------------|-----------------------|-----------------------|
| f(x) | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Remote CPU Number | Remote Producer Index | Remote Consumer Index |
| | Misc. Remote Info | | |
| | Misc. Remote Info | | |
| | Misc. Remote Info | | |
| | Misc. Remote Info | | |
| | Misc. Remote Info | | |
| | Misc. Remote Info | | |
| | Misc. Remote Info | | |
| | Misc. Remote Info | | |
| | Misc. Remote Info | | |

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FIG. 23